

R E M A R K S

Claims 1 to 3, 5 to 12 and 14 to 22 as set forth in Appendix I of this paper are now pending in this case. Claim 4 has been canceled, Claims 1 and 5 to 12 have been amended, and Claims 14 to 22 have been added as indicated.

Accordingly, applicants have amended Claim 1 to read on the subject matter of Claim 4. Claims 11 and 12 have been revised correspondingly. Additionally, applicants have deleted the reference numbers in Claims 1 and 5 to 12. New Claims 14 to 19 have been added to further bring out some of the characteristics of the region where the vanes are mounted on the shaft hub of the impeller referenced in Claims 1, 11 and 12. The arrangement with bevels which is defined in Claims 14, 16 and 18 is inter alia addressed on page 5, indicated lines 28 to 31, of the application. The corresponding embodiment defined in Claims 15, 17 and 19, in which the surface of the pumping space in the area where the vanes are mounted on the shaft hub form a continues curve in an inward direction relative to the interior of the shaft hub is, for example, addressed on page 6, indicated line 35, to page 7, indicated line 1, of the application, and is illustrated in Figures 1, 3 and 5. New Claims 20 to 22 correspond essentially to Claims 1, 11 and 12 with the difference that the subject matter of Claims 20 to 22 requires the curved form of the surface of the pumping space in the area where the vanes are mounted on the shaft hub instead of the conductive coating referenced in Claims 1, 11 and 12. No new matter has been added.

The Examiner rejected Claims 1 to 3, 5 to 7, 9, 11 and 12 under 35 U.S.C. §102(b) as being anticipated by the teaching of *Weis* (US 3,704,868), Claims 1 to 3, 5 to 8, 11 and 12 under 35 U.S.C. §102(a) as being anticipated by the teaching of *Jost* (US 1,646,913), and Claims 1 to 3, 5 to 7 and 10 to 12 under 35 U.S.C. §102(a) as being anticipated by the teaching of *Di Placido* (US 3,390,004). In light of applicants' amendment, the referenced claims now also include the requirements of Claim 4. The rationale underlying the Examiner's rejections is, therefore, no longer applicable. It is accordingly respectfully requested that the rejections under Section 102(b) based on the teachings of *Weis*, *Jost* and *Di Placido* be withdrawn.

Newly added Claims 14 to 22 require that the vanes of the impeller have bevels in the region where the vane is mounted on the shaft

hub. Neither one of the teachings of *Weis*, *Jost* and *Di Placido* suggest or imply such a configuration. The teachings of *Weis*, *Jost* and *Di Placido* therefore fail to identically describe the subject matter which is defined in the newly added claims as is required for a finding of anticipation under Section 102¹⁾. The subject matter of the newly added claims is therefore also deemed to be patentable under Section 102 over either one of the teachings of *Weis*, *Jost* and *Di Placido*. Favorable action is solicited.

The Examiner rejected Claim 4 (now Claim 1 and correspondingly Claims 11 and 12) under 35 U.S.C. §103(a) as being unpatentable

- in light of the teaching of *Weis* when taken in view of the disclosure of *Wissman* (US 4,722,664);
- in light of the teaching of *Jost* when taken in view of the disclosure of *Wissman*; and
- in light of the teaching of *Di Placido* when taken in view of the disclosure of *Wissman*,

in each case applying the primary reference for showing an apparatus or impeller as defined in applicants' independent Claims 1, 11 and 12, and the secondary reference for disclosing that it is known in the art to employ PFA linings to protect parts of a pump against corrosion. It is, however, respectfully urged that in an analysis for obviousness/non-obviousness under 35 U.S.C. §103(a), the inventive subject matter as a whole which is referred to in the statute embraces not only the subject matter which is particularly recited in the claims, but also the characteristics of such subject matter which are inherent therein and which are disclosed in the specification, as well as the problem which is solved²⁾. The problems which applicants' invention aims to solve are problems associated with the transport of polymer dispersions, and more particularly, problems caused by the shear occurring in conventional apparatus employed for transporting such dispersions as well as problems caused due to the formation of deposits in apparatus which are conventionally employed for transporting polymer dispersions³⁾. A person of ordinary skill in the art which is pertinent to the technical area of applicants' invention would not reasonably consider the teachings of *Weis*, *Jost* and/or *Di Placido* to

1) Cf. *In re Marshall* 577 F.2d 301, 198 USPQ 344 (CCPA 1978); *In re Kalm* 378 F.2d 959, 154 USPQ 10 (CCPA 1967)-

2) Cf. *In re Antonie*, 559 F.2d 618, 195 USPQ 6 (CCPA 1977); *In re Wright*, 848 F.2d 1216, 6 USPQ2d 1959 (CAFC 1988), overruled on other grounds in *In re Dillon*, 919 F.2d 688, 16 USPQ2d 1897 (CAFC 1990) (*en banc*), cert. denied 500 U.S. 904 (1991).

3) Cf. page 2, indicated lines 32 to 34, of the application.

be of help in solving those problems because all of the teachings aim at increasing the convection of the media which are to be treated in the described apparats or with the described impellers:

- *Weis* aims at increasing the aeration of a liquid, which means that the impeller is construed in such a manner that the uptake of air into the liquid and the distribution of air within the liquid is increased;
- *Jost* aims at improving the homogeneous mixing of two liquids which are of different specific gravity; and
- *Di Placido* aims at improving the saponification of rosin with aqueous alkali metal solutions.

The primary references which are applied by the Examiner have therefore in common that they are counterproductive to solving problems which are caused by shear which are to be solved by applicants' invention. The respective teachings, therefore, clearly fail to provide a person of ordinary skill seeking to improve the suitability of an apparatus for the transport of polymer dispersions with any information which is of use for addressing the problems to be solved by applicants' invention. The disclosure of *Wissman* is equally unsuitable to help out in that regard. *Wissman* merely provides that corrosion problems can be addressed by using a PFA liner. However, even provided with a PFA liner, a person of ordinary skill in the art would not reasonably expect that one of the apparats or impellers which are addressed by the teachings of *Weis*, *Jost* and *Di Placido* can be employed for transporting polymer dispersions without exposing the dispersions to undesirable shear and without causing the formation of undesirable deposits. As such, the teachings of *Weis*, *Jost* and *Di Placido* when taken in view of the disclosure of *Wissman* fail to convey to a person of ordinary skill in the pertinent art the inventive subject matter as a whole which is referred to in the statute.

It is well settled that a combination of references is improper if one of the references is non-analogous art⁴), and if a cited reference is not analogous art, it has no bearing on the obviousness of the claim⁵). Two criteria have evolved for determining whether prior art is analogous:

- (1) whether the art is from the same field of endeavor, regardless of the problem which is addressed, and

4) Cf. *In re Clay*, 966 F.2d 656, 23 USPQ2d 1058 (CAFC 1992).

5) Cf. *Jurgens v. McKasy*, 927 F.2d 1552, 18 USPQ2d 1031 (CAFC 1991), cert. denied, 502 U.S. 902 (1991).

(2) if the reference is not within the field of the inventor's endeavor, whether the reference still is reasonably pertinent to the particular problem with which the inventor is involved.

Neither one of the references which are applied by the Examiner can reasonably be considered to fall within applicants' field of endeavor, namely the transport of polymer dispersions. In light of the foregoing it is also believed to be evident that neither one of the references which are applied by the Examiner can reasonably be considered as being pertinent to the problems with which applicants' were confronted. As such, the references applied by the Examiner in rejecting applicants' claims cannot be deemed to fall within the realm of analogous art and cannot be considered to have a bearing on the patentability of applicants' claims under Section 103(a). It is therefore respectfully requested that the rejection of Claim 4 (*now Claim 1 and correspondingly Claims 11 and 12*) under Section 103(a) based on either one of the teachings of *Weis*, *Jost* and *Di Placido* when taken in view of the disclosure of *Wissman* be withdrawn. The foregoing equally applies where the subject matter defined in applicants' Claims 2, 3 and 5 to 10 is concerned which incorporate the requirements of Claim 1 by reference⁶). The subject matter of applicants' Claims 2, 3 and 5 to 10 is therefore also deemed to be patentable under Section 103(a) over either one of the teachings of *Weis*, *Jost* and *Di Placido* when taken in view of the disclosure of *Wissman*. Favorable action is solicited.

Newly added Claims 14 to 22 require that the vanes of the impeller have bevels in the region where the vane is mounted on the shaft hub. Neither one of the references applied by the Examiner teaches or suggests such a configuration. When one of the teachings of *Weis*, *Jost* and *Di Placido* is taken in view of the disclosure of *Wissman* a person of ordinary skill in the art would therefore not have been motivated to effect the change which is necessary to arrive at the invention defined in the newly added claims. The teaching or suggestion to make the claimed combination must be found in the prior art and cannot be based on the applicant's disclosure⁷), and the mere fact that the prior art can be modified in some manner so as to arrive at

6) If an independent claim is non-obvious under 35 U.S.C. §103, then any claim depending therefrom is non-obvious (*In re Fine*, 837 F.2d 1071, 5 USPQ2d 1596 (CAFC 1988)).

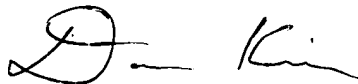
7) Cf. *In re Vaeck*, 947 F.2d 488, 20 USPQ2d 1438 (CAFC 1991).

a claimed invention does not support a conclusion of obviousness⁸). The subject matter of the newly added claims is therefore also deemed to be patentable under Section 103(a) over either one of the teachings of *Weis*, *Jost* and *Di Placido* when taken in view of the disclosure of *Wissman*. Favorable action is solicited.

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Respectfully submitted,

NOVAK DRUCE DELUCA & QUIGG



Daniel S. Kim

Reg. No. 51,877

1350 Connecticut Ave, N.W.
Washington, D.C. 20036
(202) 659-0100

Encl.: THE LISTING OF CLAIMS (Appendix I)

DSK/BAS

8) Cf. *In re Gordon*, 733 F.2d 900, 221 USPQ 1125 (CAFC 1984); see also, eg., *Interconnect. Planning Corp. v. Feil*, 774 F.2d 1132, 227 USPQ 543 (CAFC 1985).